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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,881	01/23/2004	Raymond R. Kiddy	04860.P2611C	6014

7590 09/21/2006	EXAMINER

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EXAMINER
KLIMACH, PAULA W

ART UNIT	PAPER NUMBER
2135	

DATE MAILED: 09/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 May 2004*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *48-96* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *48-96* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 48-96 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims recite "a second part of a second one of the at least two operative instruction streams," however it is not clear which part the applicant considers to be the second part and which one is the second one.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 48-56, 58, 60, and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aucsmith et al. (5,892,899) in view of Hanna (5,978,883).

In reference to claims 48 and 55 Aucsmith discloses a system comprises means for storing an obfuscated stream (column 5 lines 47-52); means for executing the obfuscated stream

(column 8 lines 40-51); and wherein when the two first parts are executed, the second part (the following subprogram) is also executed (column 8 lines 27-39 and column 8 lines 51-58).

Although Aucsmith discloses dividing the program into obfuscated subprograms and interleaving the subprograms with unrelated tasks, Aucsmith does not discloses the obfuscated stream comprising parts which are interleaved, the parts having been taken from at least two operative instruction streams; wherein a second part of a second one of the at least two operative instruction streams is interleaved between two first parts of a first one of the at least two operative instruction streams; and wherein when the two first parts are executed, the second part is also executed.

Hanna discloses stream comprising parts which are interleaved, the parts having been taken from at least two operative instruction streams (column 4 lines 50-59); and wherein a second part of a second one of the at least two operative instruction streams is interleaved between two first parts of a first one of the at least two operative instruction streams (column 4 lines 50-59).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to interleave the subprograms as taught by Hanna in the system of Aucsmith. One of ordinary skill in the art would have been motivated to do this because the sensitive program is made tamper proof by distributing the secret in space and time (column 1 lines 35-40).

In reference to claims 49 and 56 Aucsmith discloses a system wherein the second part is stack balanced (column 2 lines 37-54). Aucsmith discloses a method of stack (block) balancing by maintaining a minimum value for Delta.

In reference to claims 50 and 58 Aucsmith discloses a system wherein the obfuscated stream further comprises an obfuscation code that interrelates the parts from the operative instruction streams (Fig 2. part 104).

In reference to claims 51 and 60 Aucsmith discloses a system wherein at least one of the parts has been transformed before the parts are interleaved and after the parts are taken from the operative instruction streams (part 207 Fig. 5).

In reference to claims 52 and 62 Aucsmith discloses a system wherein at least one of the parts has been so transformed before the parts are interleaved and after the parts are taken from the operative instruction streams that the obfuscated stream performs at least the same logical operations of one of the operative instruction streams (Fig. 6).

In reference to claim 53 Aucsmith discloses a system wherein one of the operative instruction streams has been transformed before the parts are taken from the operative instruction streams (column 4 lines 52-62). The entry SubProgram is initialized (transformed) before performing partitions.

In reference to claims 54 and 54 Aucsmith discloses a system wherein two of the operative instructions streams are the same (column 5 lines 7-16).

Claims 57, 59, 61, 64, and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aucsmith in view of Hanna as applied to claims 55, 58, 60, 63, and 65 above, and further in view of the article by Cosoroaba ("Synchronous DRAM Evolutionary Changes Bring Cost/Performance Advantages in Memory Systems").

In reference to claims 57, 59, 61, 64, and 66 a system wherein the memory comprises

DRAM (Dynamic Random Access Memory) and wherein the obfuscated stream is stored

temporarily in the DRAM.

Aucsmith discloses a system that utilizes ROM and a main memory (part 704 Fig 19) for

storing the obfuscated stream, but Aucsmith does not disclose the use of DRAM.

Cosoroaba discloses the use of synchronous DRAM for main memory (Introduction).

At the time the invention was made, it would have been obvious to a person of ordinary

skill in the art to use SDRAM that is disclosed by Cosoroaba in the system of Aucsmith. One of

ordinary skill in the art would have been motivated to do this because it would provide

significant system performance improvements (Conclusion, Cosoroaba).

Claims 67-96 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aucsmith

in view of Hanna and in further view of Low et al.

In reference to claims 67, 74, 83, and 90 Aucsmith discloses a system comprises means

for storing an obfuscated stream (column 5 lines 47-52); means for executing the obfuscated

stream (column 8 lines 40-51); and wherein when the two first parts are executed, the second

part (the following subprogram) is also executed (column 8 lines 27-39 and column 8 lines 51-

58).

Although Aucsmith discloses dividing the program into obfuscated subprograms and

interleaving the subprograms with unrelated tasks, Aucsmith does not discloses the obfuscated

stream comprising parts which are interleaved, the parts having been taken from at least two

operative instruction streams; wherein a second part of a second one of the at least two operative

instruction streams is interleaved between two first parts of a first one of the at least two

operative instruction streams; and wherein when the two first parts are executed, the second part is also executed.

Hanna discloses stream comprising parts which are interleaved, the parts having been taken from at least two operative instruction streams (column 4 lines 50-59); and wherein a second part of a second one of the at least two operative instruction streams is interleaved between two first parts of a first one of the at least two operative instruction streams (column 4 lines 50-59).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to interleave the subprograms as taught by Hanna in the system of Aucsmith. One of ordinary skill in the art would have been motivated to do this because the sensitive program is made tamper proof by distributing the secret in space and time (column 1 lines 35-40).

However neither Aucsmith nor Hanna discloses a system wherein the obfuscated stream is executed on the client.

Low discloses a client server system wherein the protect code (obfuscated stream) is executed on the client (2.6 Low).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to execute the obfuscated stream on the client as taught by Low in the system of Aucsmith. One of ordinary skill in the art would have been motivated to do this because server side execution suffers from network bandwidth and latency limitations (2.6 Low).

In reference to claims 68, 75, 84, 91 Aucsmith discloses a system wherein the second part is stack balanced (column 2 lines 37-54). Aucsmith discloses a method of stack (block) balancing by maintaining a minimum value for Delta.

In reference to claims 69, 76, 85, 92 Aucsmith discloses a system wherein the obfuscated stream further comprises an obfuscation code that interrelates the parts from the operative instruction streams (Fig 2. part 104).

In reference to claims 70, 77, 86, 93 Aucsmith discloses a system wherein at least one of the parts has been transformed before the parts are interleaved and after the parts are taken from the operative instruction streams (part 207 Fig. 5).

In reference to claims 71, 78, 87, 94 Aucsmith discloses a system wherein at least one of the parts has been so transformed before the parts are interleaved and after the parts are taken from the operative instruction streams that the obfuscated stream performs at least the same logical operations of one of the operative instruction streams (Fig. 6).

In reference to claims 72, 79, 88, 95 Aucsmith discloses a system wherein one of the operative instruction streams has been transformed before the parts are taken from the operative instruction streams (column 4 lines 52-62). The entry SubProgram is initialized (transformed) before performing partitions.

In reference to claims 73, 80, 89, 96 Aucsmith discloses a system wherein two of the operative instructions streams are the same (column 5 lines 7-16).

In reference to claim 81 Aucsmith does not disclose a system wherein the communication device comprises a network interface.

Low discloses client server communications that implicitly require network interface (section 2.2).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to communicate over the network as taught by Low using the system of Aucsmith.

One of ordinary skill in the art would have been motivated to do this because distributed networks assist people to share information at a global scale.

In reference to claim 82 Aucsmith does not disclose a system wherein the network interface comprises an Ethernet interface.

Low discloses client server communications that implicitly require network interface (section 2.2), wherein Ethernet is a common example.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to communicate over the network using an Ethernet interface as taught by Low using the system of Aucsmith. One of ordinary skill in the art would have been motivated to do this because distributed networks assist people to share information at a global scale.

In reference to claim 94, wherein at least one of the parts has been so transformed before the parts are interleaved and after the parts are taken from the operative instruction streams (Part 207 Fig. 5) that the obfuscated stream performs at least the same logical operations of one of the operative instruction streams (column 5 lines 7-16).
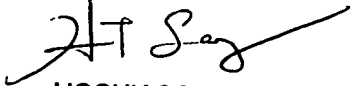
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paula W. Klimach whose telephone number is (571) 272-3854. The examiner can normally be reached on Mon to Thr 9:30 a.m to 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on (571) 272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

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like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PWK
Monday, September 18, 2006

HOSUK SONG
PRIMARY EXAMINER